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DATA COMMUNICATION NETWORK WITH TRANSFER PORT, CASCADE PORT
AND/OR FRAME SYNCHRONIZING SIGNAL

5 ABSTRACT OF THE DISCLOSURE

A data communication system, such as a local area network, is provided with a capability of transmitting isochronous data. Preferably the system conveys both isochronous data and non-isochronous data by time-multiplexing the data into a recurring frame structure on a four-bit nibble basis. An efficient encoding scheme permits transmission of both isochronous and non-isochronous data over existing media, such as twisted pair, without degrading bandwidth previously achieved for non-isochronous data over the same media, such as using an ethernet system. Bandwidth available for a particular isochronous source/sink is selectable and sustainable with a predefined granularity. The arriving data is de-multiplexed at the hub into separate channels for handling the separate streams by appropriate hardware. Preferably, the present invention can be implemented in a fashion that is transparent to already-installed media access controllers. Preferably, some components of the system can detect the frame-transmission capability of other components and, if such capability is lacking, can fall back to a mode compliant with existing capabilities.

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